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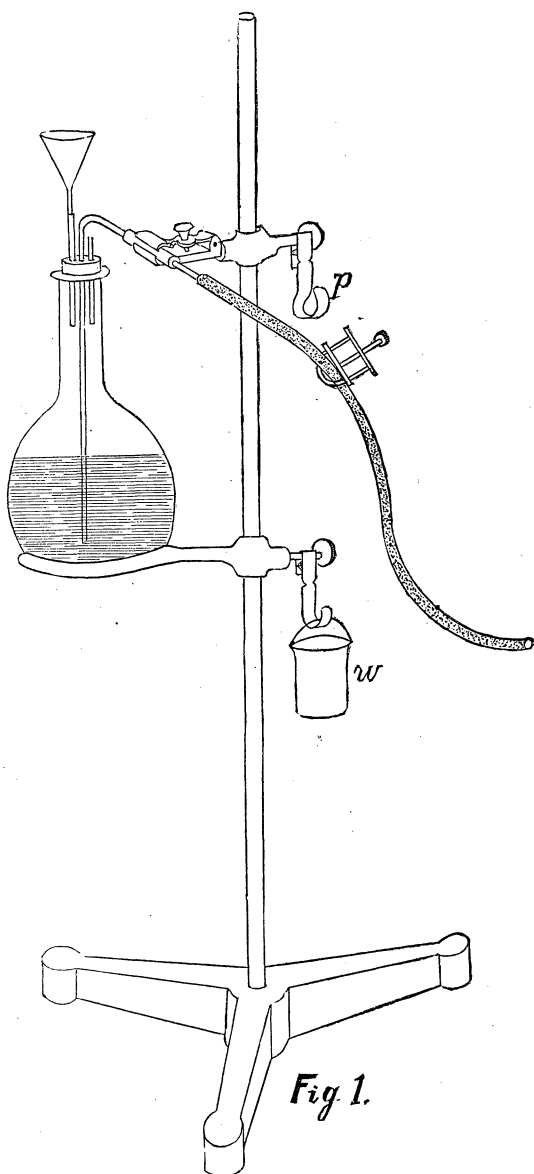
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MICROSCOPY.¹

AN ALCOHOLIC DRIP FOR THE THOMA-JUNG MICROTOME.—As



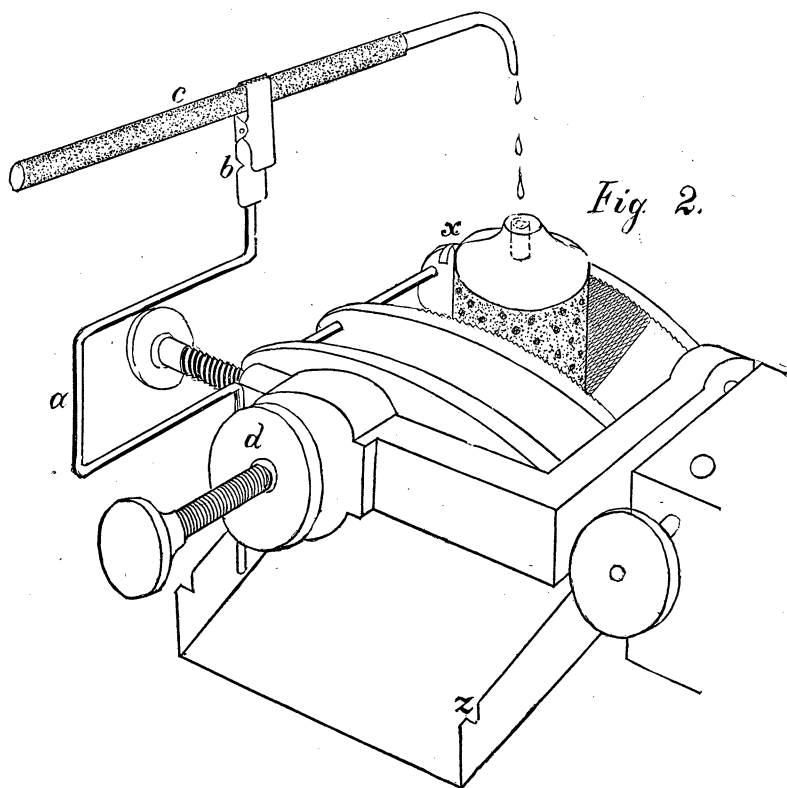
is well known, sections of many hardened specimens may be readily made without imbedding by simply fastening them in the holder of a microtome, with or without cork, pith, etc., for support. Trial sections of moderate thinness thus made often prove surprisingly useful. Decalcified bone, cartilage, kidney, and many other *hardened* animal tissues may be examined with great despatch, while stems, roots, and other fairly rigid portions of plants also give excellent results. This simple method generally demands, however, that the object shall be constantly flooded with strong alcohol, and the same necessity exists always in the use of celloidin, which we have found to be an imbedding material of great utility, especially in vegetal histology. For the Schanze and other microtomes, in which the object is raised

without any lateral

¹ Edited by Dr. C. O. WHITMAN, Mus. Comparative Zoology, Cambridge, Mass.

tubing, upon which is placed a common screw-clamp for regulating the outflow, supplies a dripper which is effective and quickly home-made in any laboratory. For the Thoma microtome it is also available, either by flooding the knife when this is set slanting and pushed clear of the instrument, or by frequent readjustments to compensate the progress of the object up the inclined plane. Either of these expedients, however, involves objections which are avoided by the use of the simple apparatus here figured.

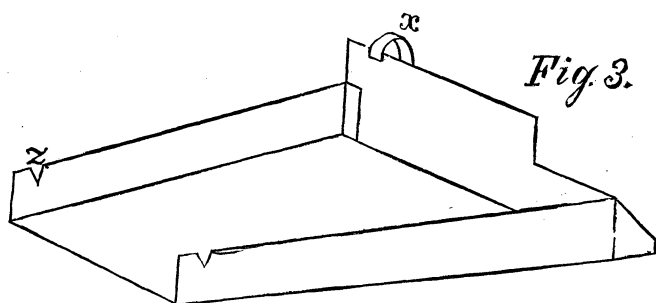
Constant pressure and flow are secured by the siphon which is



obtained conveniently as in Fig. 1. The stopper of the flask or bottle may, of course, be omitted, but in the figure it has three holes: one for the siphon-tube, one for a small funnel, and one for the exit of the vapor when alcohol is poured in through the funnel.

For use with the Thoma microtome the end of the flexible siphon-tube is attached to the object-holder in such a way as to travel with it, and hence over the object, wherever it goes (Fig. 2). This is done by means of a bent (or straight) stiff wire (*a*),

to the top of which is soldered a clipp or grip (*b*), which embraces the end of the siphon-tube (*c*), as shown in the figure, and gives adjustment by allowing the dripper to be pushed back or forth. Instead of the wire and clip a "sleeve-holder" having a long shank may be used, after merely straightening out and twisting the shank. Attachment of the wire to the object-holder is secured by the collar (*d*), which is screwed down firmly upon the wire and gives at the same time a second and valuable adjustment about a vertical axis. To carry off and save the alcohol a copper or tin trough is used, and is shown in Fig. 3. It may be readily made by "bending up" a thin flat piece of the metal, and



is completed by the addition of a small hook (*x*) of the same material, though this may be dispensed with. The trough fits underneath and behind the object-holder, as shown in Fig. 2, the hook *x* serving to hang it (Fig. 2, *x*). The notches, *z z*, in the trough are for a loop of wire or string passing about the neck of a beaker (Fig. 1*w*), which is thus carried underneath, catches the alcohol, and is occasionally emptied into the siphon-flask. When not in use the siphon-drip and the wire are removed by loosening the collar (Fig. 2, *d*), and are hung as one piece upon the bulldog hook (*p*, Fig. 1). In the devising and constructing of the apparatus I have been constantly aided by my friend and pupil, Mr. G. E. Stone, who has also made the accompanying drawings.
—*W. I. Sedgwick.*